

Orolia Demonstrates Unmanned Vessel PNT and GNSS Signal Integrity Solutions



Background

Orolia, through its France-based entity Orolia Systèmes & Solutions (O2S), demonstrated its remote Positioning, Navigation and Timing (PNT) and GNSS signal integrity solutions as part of a [ROSS project](#) (Remotely Operated Service at Sea) event where an unmanned vessel was teleoperated from hundreds of miles away.

The ROSS project is led by SeaOwl Group, a global company that provides outsourcing services to energy companies on land, sea and maritime platforms. The project goal is to provide maritime services and naval operations with an innovative approach to teleoperating surface vessels from land-based control centers.

Oil and gas companies have shown particular interest in this technology as they seek reliable, proven unmanned systems for their ocean-based platforms. These solutions can help reduce maintenance and related costs associated with multiple back and forth trips to shore, in addition to addressing critical security concerns in various regions.

Solution

With its SecureSync® Interference Detection and Mitigation (IDM) suite, Orolia provided the project's Positioning, Navigation and Timing (PNT) cybersecurity package and delivered precise, reliable data for the control center to pilot the vessel. The IDM suite includes GNSS threat detection and mitigation, as well as the option to include encrypted and alternative signals for use in GNSS-denied environments.

The first live demonstration in Palaiseau, France took place on the 'VN Rebel' (80 m long French vessel) and the SeaOwl Captain successfully teleoperated his vessel via satellite from École Polytechnique near Paris, 500 miles away from the Naval Base of Toulon, France where the vessel is actually based.

During the test, in addition to proving the successful operation of remote navigation functions (steering, visual watch, VHF, anti-collision maneuvers, etc.), the SeaOwl crew also demonstrated successful responses to trial scenarios. These operational challenges included a weather incident resulting in the loss of communications connectivity, and a cybersecurity attack with the detection of GNSS signal jamming through Orolia's SecureSync IDM suite.

Results

Orolia played a key role in the successful testing and validation of the ROSS project concept and capabilities during a live demonstration.

Following the success of this live session, SeaOwl obtained, from the French Minister of the Sea, the first remotely operated vessel navigation license in France.

